

**REMARKS**

In the present amendment, claims 20 and 22 have been canceled without prejudice or disclaimer. Upon entry of the amendment, which is respectfully requested, claims 12, 14-19, 21 and 24 will be pending in the application.

**Paragraph Nos. 3 and 4**

In Paragraph Nos. 3 and 4 of the Action, claim 12 is rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Skoultchi (3,575,925).

According to the Examiner, Applicants argue that the compounds of Skoultchi have a different structure than that of the present invention. Applicants argue that the present structure requires that the aromatic ring be directly linked to the naphthalene ring with no intervening carbonyl group as found in Skoultchi. Thus, Applicants note, the present structure does not undergo a chemical change even if exposed to light, whereas the compounds of Skoultchi do because of the carbonyl group.

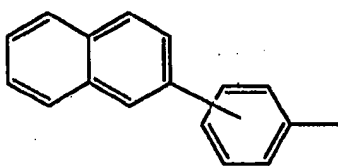
The Examiner retains the rejection over Skoultchi because group A<sub>1</sub>, the group in question, is drawn to “a divalent aromatic ring or heteroaromatic ring group having from 5 to 14 carbon atoms, which may have a substituent.” According to the Examiner, the structure cited by Applicants for Skoultchi as well as the other A<sub>1</sub> structures identified by the Examiner in the rejection read on this “group” for A<sub>1</sub>. Per the Examiner, there is no limitation of this aromatic group to only aromatic rings directly attached to the naphthalene ring as alleged by Applicants.

Although the claims are interpreted in light of the specification, the Examiner says, limitations from the specification are not read into the claims.

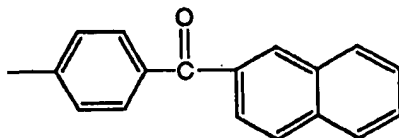
Applicants again respectfully traverse the rejection, and submit that the Examiner has a technically mistaken perception on this point. Applicants respectfully disagree with the

Examiner's position that the carbonyl group in Skoultchi is a substituent group within the meaning of the present claims. The carbonyl group is an additional, linking group not called for in the present claims. A substituent is an atom or radical that replaces another in a molecule as the result of a reaction. As interpreted by one of ordinary skill in the art, a substituent group on A<sub>1</sub> would be a group which replaces one of the hydrogen atoms on the divalent aromatic ring or heteroaromatic ring group. Contrary to what the Examiner asserts, Applicants are not reading a limitation from the specification into the present claims.

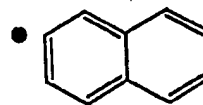
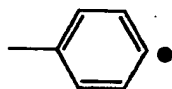
Applicants submit that "substitution" means the replacement of hydrogen atom(s) contained in a skeletal structure by another radical, and "substituent" means the radical that replaces the hydrogen in the skeletal structure, as explained in the chemical dictionary definitions submitted herewith. See The Condensed Chemical Dictionary, tenth edition, page 977 and Grant & Hackh's Chemical Dictionary, fifth edition, page 558. In the context of the present invention, "substitution" means the replacement of the hydrogen atom(s) in the following skeletal structure by a radical corresponding to a substituent:



The compound in Skoultchi having the following structure cannot be obtained by the replacement of the hydrogen atom(s) in the above-mentioned skeletal structure by a radical corresponding to a substituent.



In order to obtain the compound in Skoultchi, it would be necessary that the above first-mentioned skeletal structure is divided into two pieces as follows:



In view of the above, it is clear that Skoultchi does not disclose or render obvious the bottom anti-reflective coating material composition of present claim 12. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the § 102(b) anticipation rejection of claim 12 over Skoultchi.

#### **Paragraph No. 5**

In Paragraph No. 5 of the Action, claims 14-20 and 22 are withdrawn from further consideration, as being drawn to a non-elected species, there allegedly being no allowable generic or linking claim. The Examiner indicates that Applicants timely traversed the restriction (election) requirement in Paper No. 5, filed April 9, 2001. The Examiner states that claim 19 which is wholly dependent upon non-elected claim 18 is now also held non-elected in view of the amendment to claim 19 removing improper multiple dependency.

Applicants respectfully disagree with the Examiner's position as stated in Paragraph No. 5. It appears to Applicants that the Examiner has not followed the Office's practice regarding Markush-type claims, as stated in Section 803.02 of the MPEP. As stated in this section, a Markush-type claim is to be examined fully with respect to the elected species and any species considered to be clearly unpatentable over the elected species. Should no prior art be found that

anticipates or renders obvious the elected species, as is the case here, the search of the Markush-type claim will be extended. The Examiner has not extended her search.

Further, Applicants respectfully do not see how the Examiner can say that claims 14-20 and 22 are drawn to non-elected species. As pointed out in the Amendment filed April 9, 2001, in addition to claim 21 (designated species A), claims 12, 14, 15, 16, 17, 18, 19 and 24 are readable on the elected species. Thus, Applicants submit that the Examiner should consider these claims and not withdraw them from consideration. Accordingly, Applicants respectfully request that the Examiner consider these claims.

Applicants also disagree with the Examiner's statement that Applicants traversed the restriction (election) requirement in Paper No. 5. Contrary to what is indicated in the action, Applicants did not traverse the restriction (election) requirement.

As to claims 20 and 22, Applicants note that the above issue is moot in view of the cancellation of claims 20 and 22.

**Paragraph No. 6**

In Paragraph No. 6 of the Action, claim 24 is withdrawn from further consideration, as being allegedly drawn to a non-elected invention, there allegedly being no allowable generic or linking claim. Per the Examiner, Applicants timely traversed the restriction (election) requirement in Paper No. 5, filed April 9, 2001.

Applicants again respectfully disagree with the Examiner's position. As stated in the Response filed April 9, 2001, claim 24 is readable on the elected species. Therefore, Applicants submit that it is incorrect for the Examiner to withdraw claim 24 from further consideration on

the ground that it is allegedly drawn to a non-elected invention. Further, Applicants did not traverse the restriction (election) requirement, contrary to what is indicated in the Action. Again, Applicants submit that the Examiner has not followed the proper procedure for examining Markush-type claims as set forth in Section 803.02 of the MPEP.

Applicants therefore respectfully traverse Paragraph No. 6 of the Action and request that claim 24 not be withdrawn from further consideration.

**Paragraph No. 7**

In Paragraph No. 7 of the Action, claim 21 is objected to as being dependent upon a rejected base claim, but is stated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants note with appreciation the Examiner's indication that claim 21 contains allowable subject matter. In view of the patentability of claim 12 over Skoultchi, as discussed above, Applicants submit that claim 21 is allowable in its present form.

**Paragraph No. 8**

In Paragraph No. 8 of the Action, the Examiner states that this Application contains claims 14-20, 22 and 24 drawn to an invention non-elected with traverse in Paper No. 5. Per the Examiner, a complete reply to the final rejection must include cancellation of the non-elected claims or other appropriate action.

Again, Applicants respectfully disagree with the Examiner's position. In addition to claim 21, claims 12, 14, 15, 16, 17, 18, 19 and 24 are readable on the elected species. (Claims 20 and 22 have been cancelled in the present Amendment.)

Serial No.: 09/615,708

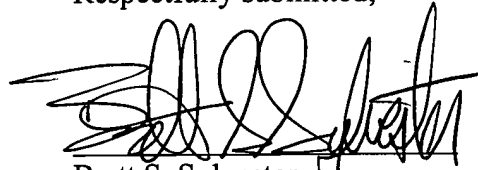
Docket No. Q60118

Accordingly, Applicants respectfully request that the Examiner examine these claims on the merits. Further, the Examiner is not correct that the claims were non-elected "with traverse." The election of species was without traverse.

For all of the above reasons, it is respectfully requested that the Examiner consider and allow claims 12, 14-19 and 24.

Allowance is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Brett S. Sylvester", written over a horizontal line.

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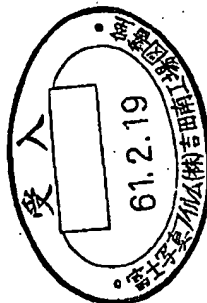
Date: August 19, 2002

*The*  
*Condensed Chemical*  
*Dictionary*

TENTH EDITION

Revised by

GESSNER G. HAWLEY




Kazuyoshi MIZUTANI, et al.

Appln. No. 09/615,708

Confirmation No.: Not yet Assigned

Filed: July 13, 2000

Q60118

 VAN NOSTRAND REINHOLD COMPANY  
NEW YORK ATLANTA DALLAS SAN FRANCISCO  
CHICAGO LONDON TORONTO MELBOURNE

"Stymer" Vinyl Styrene. <sup>a</sup> Trademark for resins used as sizes for filament acetates.

LP. A vinyl resin, soluble with ammonium hydroxide. S. Styrene copolymer resin, soluble in water.

S-type synthetic elastomer. See styrene-butadiene rubber.

styphale acid (2,4,6-trinitroresorcinol)

$\text{C}_6\text{H}_2(\text{NO}_2)_3$

Properties: Yellow crystals; estranged; an initiating explosive; m.p. 179-180°C; forms addition compounds with many hydrocarbons. Soluble in alcohol and ether; slightly soluble in water.

Derivation: Nitration of resorcinol.

Hazard: Severe explosion risk when heated. Probably toxic.

Use: Priming agents in the explosives industry. Shipping regulations: (Rail) Consult authorities. (Air) (dry or wet with less than 10% water) Not acceptable; (wet with not less than 10% water) Flammable Solid label.

Legal label name: trinitroresorcinol.

styryls. See cinnamyl cinnamate.

"Styrenil." <sup>a</sup> Trademark for polystyrene with glass fiber reinforcement.

styryl acetate. See alpha-methylbenzyl acetate.

styryl alcohol. See alpha-methylbenzyl alcohol.

styrene. A type of balsam found in Central America and the Near East. See balsam.

styrenated oil. A drying oil whose drying and hardening characteristics have been modified by incorporation of styrene or a similar monomer.

styrene. See polystyrene; styrene monomer.

styrene monomers (Vinylbenzenes; phenylethylenes; ethylenes)  $\text{C}_6\text{H}_5\text{CH}=\text{CH}_2$ . 20th highest-volume chemical produced in U.S. (1979).

Properties: Colorless, oily liquid; aromatic odor. F.p. -30.6°C; b.p. 145.2°C; sp. gr. (25/25°C) 0.9045; w/gal (20°C) 7.55 lb; flash point 88°F (31.1°C). Autoignition temp 914°F (490°C). Insoluble in water; soluble in alcohol and ether. Readily undergoes polymerization when heated or exposed to light or a peroxide catalyst. The polymerization releases heat and may become explosive.

Derivation: From ethylene and benzene in the presence of aluminum chloride to yield ethylbenzene, which is catalytically dehydrogenated at about 650°C to form styrene.

Grades: Technical 99.2%; polymer 99.6%. Containers: Glass bottles; carboys; steel drums; tank cars and tank trucks.

Hazard: Toxic by ingestion and inhalation. Tolerances, 90 ppm in air. Flammable, moderate fire risk. Explosive limits in air 1.1 to 6.1%. Must be inhibited during storage.

Use: Polystyrene; SBR, ABS and SAN resins;

protective coatings (Styrene-butadiene latex; alkyd); styrenated polyester; rubber-modified polystyrene; copolymer resins; intermediates. Shipping regulations: (Inhibited) (Rail, Air) Flammable Liquid label. (Uninhibited) (Air) Not acceptable.

styrene-acrylonitrile. See polystyrene.

styrene-butadiene rubber (SBR). By far the most widely used type of synthetic rubber; its consumption for all applications is about four times that of polybutadiene, its nearest competitor, and 11 times that of all other elastomers combined. Its manufacture involves copolymerization of about 3 parts butadiene with 1 part styrene. These materials are suspended in finely divided emulsion form in a large proportion of water, in the presence of a soap or detergent. Also present in small amounts are an initiator or catalyst which is usually a peroxide, and a chain-modifying agent such as dioctyl mercaptan. Use: Tires, footwear, mechanical goods, coatings, adhesives, solvent-release sealants, carpet backing. See also rubber, synthetic; polymerization; free radical.

styrene glycol  $\text{C}_6\text{H}_5\text{O}$ .

Properties: Acicular crystals; m.p. 67°C; b.p. 272°C; soluble in water and organic solvents.

Use: Plasticizer.

styrene sulfonate. A compound resulting from the reaction between styrene and nitrogen dioxide and used as a qualitative or quantitative specific test for monomeric styrene in mixtures with other hydrocarbons.

styrene oxide  $\text{C}_6\text{H}_5\text{CH}_2\text{OCH}_2$ .

Properties: Colorless to pale straw-colored liquid. Boiling range (5 to 95%) 194.2-195°C; f.p. -36.8°C; flash point 180°F (82.2°C) (COO); refractive index (n 25/D) 1.5328; sp. gr. (25/4°C) 1.0409; miscible with benzene, acetone, ether, and methanol. Combustible.

Hazard: Toxic by ingestion and inhalation.

Use: Highly reactive organic intermediate.

"Styreneol." <sup>a</sup> Trademark for a group of styrenated alkyd resins with air-drying and baking properties and high resistance to gasoline, alkalies, acids, and water.

"Styrofoam." <sup>a</sup> Trademark for expanded, cellular polystyrene (available in colors).

Use: Insulating material; light-weight materials for boats, toys, etc.; separators in packing containers; airport runways; highway construction; battery cases.

"Styron." <sup>a</sup> Trademark for polystyrene resins; general purpose, medium and hi impact, heat and impact-heat resistant, and light-stabilized resins ("Styron Verdier"). Available in wide range of

translucent and opaque colors, as well as natural and crystal.

Use: Packaging, toys, appliance parts, bottle closures and containers, hot and cold drinking cups, television cabinet backs, automotive components and machine housings, lighting equipment.

styryl carbolol. See cinnamic alcohol.

suberone. See cycloheptanone.

succinic acid (octanedioic acid)  $\text{HOOC}(\text{CH}_2)_6\text{COOH}$ .

Properties: Colorless crystals from water; m.p. 143°C; b.p. 279°C at 100 mm. Partially soluble in water and ether; soluble in alcohol. Combustible.

Derivation: Oxidation of oleic acid with nitric acid. Use: Intermediate for the synthesis of drugs, dyes and high polymers.

suberone. See cycloheptanone.

sublimations. The direct passage of a substance from solid to vapor without appearing in the intermediate (liquid) state. An example is solid carbon dioxide which vaporizes at room temperature; the conversion may also be from vapor to solid under appropriate conditions of temperature.

subnuclear particle. A particle either found in the nucleus or observed coming from the nucleus as the result of nuclear reaction or rearrangement, i.e., neutron, meson, etc.

substance. Any chemical element or compound. All substances are characterized by a unique and identical constitution, and are thus homogeneous. "A material of which every part is like every other part is said to be homogeneous and is called a substance." (Black and Constant, "Practical Chemistry.") See also homogeneous.

substantive dye. See direct dye.

substitution. An atom or radical that replaces another in a molecule as the result of a reaction. See substitution.

substitute natural gas. See synthetic natural gas.

substitution. The replacement of one element or radical by another as a result of a chemical reaction. Chlorination of benzene to produce chlorobenzene is a typical example; in this case a chlorine atom replaces a hydrogen atom in the benzene molecule.

substrate. (1) A substance upon which an enzyme or ferment acts. (2) Any solid surface on which a coating or layer of a different material is deposited.

subtilin. An antibiotic produced by the metabolic processes of a strain of *Bacillus subtilis*. It is a cyclic polypeptide similar to bacitracin in chemical structure and antibiotic activity, but not as important clinically. Subtilin is active against many gram-positive bacteria, some gram-negative cocci, and some species of fungi. It is a surface tension

depressant, and its antihistolic action is increased by use of wetting agents.

Properties: Soluble in water in pH range 2.0-6.0; soluble in methanol and ethanol (up to 80%); insoluble in dry ethanol or other common organic solvents. Relatively stable in acid solutions. Inactivated by pepsin and trypsin, and destroyed by light. Use: Seed disinfectant; bacteriostat in foods.

succinaldehyde (butanedial)  $\text{OHCCH}_2\text{CH}_2\text{CHO}$ .

Properties: Liquid; sp. gr. 1.064 (20/4°C); b.p. 169-170°C. Refractive index 1.4254. Soluble in water, alcohol, and ether. The name succinaldehyde is often incorrectly used in commerce as a synonym for succinic anhydride.

succinic acid (butanedioic acid)  $\text{CO}_2\text{H}(\text{CH}_2)_2\text{CO}_2\text{H}$ . Properties: Colorless crystals; slightly soluble in water; soluble in alcohol and ether; odorless; acid taste. Sp. gr. 1.532; m.p. 185°C; b.p. 235°C. Combustible. Low toxicity.

Derivation: Fermentation of ammonium tartrate.

Grades: Technical; C.P.; F.C.C.

Containers: Bottles, barrels; kegs; fiber drums. Use: Organic synthetic; manufacture of lacquers, dyes, esters for perfumes; photography; in foods as a sequestrant, buffer, neutralizing agent.

succinic acid, 2,3-dimethylhydrazide (diaminozide)  $(\text{CH}_3)_2\text{NNHCOCCH}_2\text{CH}_2\text{COOH}$ .

Properties: White crystals; m.p. 155°C; pH 3.8 (500 ppm); soluble in water; insoluble in simple hydrocarbons.

Use: Growth retardant used in greenhouses; retards premature fruit drop.

succinic acid peroxide  $(\text{HOOCCH}_2\text{CH}_2\text{CO})_2\text{O}_2$ .

Properties: Fine white, odorless powder; m.p. 125°C (dec). Moderately soluble in water; insoluble in petroleum solvents and benzene.

Hazard: Moderately toxic by ingestion and inhalation; irritant to skin. First risk in contact with combustible materials. Oxidizing agent.

Use: Polymerization catalyst; decolorant; antileptic.

Shipping regulations: (Rail, Air) Organic Peroxide label. Not acceptable passenger.

succinic anhydride (2,5-diketotetrahydrofuran; succinyl oxide; butanedioic anhydride)  $\text{H}_2\text{C}(\text{COO})_2\text{CH}_2$ .

Properties: Colorless or light-colored needles or flakes; sp. gr. 1.104 (20/4°C); m.p. 120°C; b.p. 261°C. Soluble in alcohol and chloroform; insoluble in water. Sublimes at 115°C at 5 mm pressure. Combustible.

Grade: Distilled.

Containers: 250-lb drums; carboys.

Use: Manufacture of chemicals, pharmaceuticals, esters; hardener for resins, starch modifier in foods.

succinilamide (2,5-diketopyrrolidone)

GRANT & HACKH'S  
**CHEMICAL  
DICTIONARY**

[American, International, European and British Usage]

*Containing the Words Generally Used in Chemistry,  
and Many of the Terms Used in the Related  
Sciences of Physics, Medicine, Engineering,  
Biology, Pharmacy, Astrophysics,  
Agriculture, Mineralogy, etc.*

*Based on Recent Scientific Literature*

FIFTH EDITION

*Completely Revised and Edited by*

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Appln. No. 09/615,708

Confirmation No.: Not yet Assigned

Filed: July 13, 2000

Q60118

